

ABSTRACT

Acoustic wave characteristics varied by illumination of the acoustic wave propagation medium. An acoustic wave is generated and propagated on or through a medium, typically a piezoelectric substrate. The medium is illuminated, creating a charge grating. The velocity of the acoustic wave is altered and certain frequency components of the acoustic wave are reflected. Transducers may be used to extract the selected frequency. The characteristics of the illumination, including, among others, the wavelength and the intensity, may be varied to produce various acoustic wave velocities and to select particular acoustic wave frequency components.